MR. AUSTIN'S APPARATUS FOR FITTING SHIPS' BOATS AS LIFE-BOATS, IN CASES OF SHIPWRECK, AND FOR RAISING SUNKEN VESSELS.

MR. AUSTIN, formerly Harbour-Master at the island of Heligoland, suggests the following plan as sufficiently simple to be within the reach of every vessel in such emergencies :—

When a vessel is driven on the rocks, sands, or shore, or founders at sea, in getting the boats over the side they are frequently stove alongside the wreck before the tackles can be unhooked, and, even if cleared off the tackles, it too often occurs that they are stoved, swamped, or upset, when brought alongside to receive the passengers and crew. To avoid such calamities, Mr. Austin recommends that every boat, before she is launched over the side, should be fitted as a life-boat, with canvass cases on each side, of the whole length of the boat, having a round head at either end marled on to a good hawser or small chain, and secured round her at light-water mark, tautened up by nettles to the gunwale. The cases may be cut out of good topsails or courses, and made from two to three feet in diameter; another case of lighter cloth, of duck, or even of calico, should be made, rather larger in dimensions, and placed within the stout canvass case, each case having three flexible tubes or pipes inserted at the bottom part, one near to each head, and one in midships, made of raw hide, India-rubber cloth, or several thicknesses of canvass, about a fathom in length, and half an inch in diameter, with a mouth-piece or pipe to be blown into, and stopped or corked. The long-boat and skiff should be placed on two spars projected over the side, for the purpose of launching them; the cases well saturated with water, filled with air, stopped, and the boat launched, with plenty of warp slack under foot, and not brought up with less than half a cable, each boat having only two hands in her when launched, with a line passed round them and stopped to the thwart, to bale her out, and to receive the passengers and crew, who should have a smaller similar case placed round each of them.

The boats so fitted would contain with safety double the number of persons they could possibly hold under ordinary circumstances, and would not be upset in a heavy sea, and on going on a lee-shore would hold together and drive well up.

If the weather and sea should admit of the boats being brought alongside the wreck, the cases being filled with air would serve as flexible fenders, and allow her taking in a number of persons to be removed to the other boats.

Raising Sunken Vessels.

According to Lloyd's List, taking an average of three years, not fewer than 557 vessels are sunk or altogether lost annually.

A vessel having gone down, the first operation is to ascertain her position as nearly as possible, by sweeping with a rope of sufficient length, having two leads fixed thereto, at about sixty fathoms apart, the object of which is to draw the rope along the bottom till it meets with an obstruction. It is easily ascertained by sounding whether the obstruction to the progress of the sweeping-rope is caused by the vessel, or by an anchor or other object; if it be the vessel, it is necessary to ascertain the position in which she lies; this is done by again sweeping the vessel with a small working chain, properly buoyed at equal distances, which will shew her length and beam. To ascertain if the bowsprit is still standing, it is necessary to sound again at each end of the vessel. The purchase-chain is next passed round the vessel, having a sufficient number of collapsed air-cases (formed as above described) shackled on to it, and when tautened round her by means of other cases, or purchase-lighters, the chain is effectually secured round the vessel by stoppers. The operation of filling the air-cases is next proceeded with, which is effected by powerful air-pumps on board a steam-vessel taken out for the purpose, and as the displacement of the water is going on the vessel is gradually being raised from her bed, and by the time they are filled she will be above the surface of the water, and ready to be towed to shore by the steamer.

ON THE ATMOSPHERIC BUDE-LIGHT.

By John Bethell, Esq.

The invention of the Bude-Light is due to Goldsworthy Gurney, Esq. of Bude, in the county of Cornwall, who, for the last twenty years, has been endeavouring to obtain, by numerous experiments, a powerful and beautiful light. In 1822, he invented the Oxy-hydrogen Light, which he fully explained in his lectures delivered in Cornwall in 1822, and subsequently published in his book on Chemistry in 1823. This light was the result of his experiments on the oxyhydrogen blowpipe.

Some years afterwards Mr. Gurney invented another powerful light, which was effected by passing a stream of pure oxygen gas through the wick of an oil-lamp, whereby a most intense and beautiful light was produced. This light, which was originally called the Bude-Light, was put up at the Trinity House, and